

## **2000 Colonial Waterbird Breeding Summary Cape Hatteras National Seashore**

Colonial waterbirds established eighteen colonies along Cape Hatteras National Seashore beaches in 2000. Species breeding on Seashore beaches this year include Least, Common and Gull-billed Terns as well as Black Skimmers. Nest surveys were conducted between June 27 and July 8, 2000. Breeding activity occurred between May and August. In many cases, birds utilized areas already closed to the public for nesting American Oystercatchers and Piping Plovers. In other areas, symbolic fencing was erected once birds were observed exhibiting courtship behavior or nests were found. In 2000, most of the colonies were comprised of small groups of Least Terns. A total of 465 nests were located this season (Table 1). This is a sharp decline from last year's totals of 1204. This number represents a decline from numbers found in previous years. Nine peak season surveys were conducted between 1977 and 1999. During this period, annual nest numbers have ranged from 762 to 1637 (Table 2). Of the 465 nests found this year, 406 were found at Ocracoke Inlet flats. All sites had high incidents of nest failure, with the exception of the Ocracoke Inlet site. Breeding efforts could not be compared with other sites in the state since North Carolina Wildlife Resource Commission did not conduct statewide breeding surveys in 2000; however, the most recent state surveys also reflect an overall decline in beach nesting colonial waterbirds.

Factors known to have impacted breeding success included inclement weather events bringing wind, rain and ocean flooding. The single most severe weather was a three-day storm beginning on May 28th. Predation, and in some cases, human disturbances were also contributing factors to overall nest decline.

*Breeding Sites* Least Terns established a small colony east of the pre-existing bird closure at Oregon Inlet on Bodie Island. At least four nests were observed before abandonment due to ocean flooding on July 1. This is of interest since the site has not supported a colony in at least six years. In 2000, Least Tern courtship displays were observed early in the season but no nesting occurred. Birds may have moved to the nearby colony on Oregon Inlet's south side at Pea Island National Wildlife Refuge.

On Hatteras Island's east facing beaches, 10 small Least Tern colonies were documented. Of these, seven sites were found between ramps 23 and 27, another was located 0.8 miles north of ramp 34 and one was located immediately south of ramp 34. These areas were posted as soon as bird activity was found. All but one of the sites between ramps 23 and 27 were abandoned in a storm during the last week of May. The storm created ocean flooding and high winds. Only one colony with six nests was reestablished. The site north of ramp 34 was also unsuccessful with only 2 nests. Eighteen nests were recorded south of ramp 34 (Table 1). Cat and, in some cases, dog tracks were recorded in these sites.

Reproductive success has been low in these areas for several successive years. Few chicks have been observed.

Similarly, poor reproductive success was found at south facing beaches of lower Hatteras Island. Least Terns, Common Terns and Black Skimmers began to establish territories within the Cape Point closure early in the season. The site was abandoned except for a few Least Terns. Only three Least Tern nests were found but none were successful. A total of ten Least Tern nests were found in the three small colonies on the South beach between Ramps 45 and 49 (Table 1). Two of the colonies were located in existing bird closures; a third area was posted when courtship activity was sighted. Many birds attempted to re-nest throughout the breeding season with little success. A few fledglings were seen in the South beach colony. As in past years, these sites also contained feral cat, and to a lesser extent, dog tracks. Gulls, crows and opossum, all potential predators, were also observed. Higher concentrations of avian predators were more commonly seen near Cape Point and South beach areas than in other nesting sites in the Seashore.

Breeding activity was observed early in the season within the established bird closure at Hatteras Inlet spit. The site, used by Least Tern, Common Tern and Black Skimmer, produced only three skimmer nests and no chicks (Table 1). No re-nesting attempts were sighted. Feral cat, dog, opossum and raccoon tracks were observed in the area. As in other sites, avian predators were observed throughout the season.

Two colonies were established on Ocracoke Island. A small Least Tern colony was located approximately 1 mile northeast of the lifeguard beach near ramp 70. The site was abandoned except for a few adults. Two remaining nests produced two fledglings. Birds that abandoned this site may have joined the colony located at Ocracoke Inlet flats. The Ocracoke Inlet colony was initially lost to extensive flooding caused by the late May storm but was recolonized. The site eventually supported the largest and most productive colony in the Seashore this year with 406 nests (Table 1). This number, however, is low when compared to 1075 nests found at the same site in 1999. Black Skimmers, Least Tern, Common Tern and Gull-billed Tern utilized this site, as in previous years. Hatching and fledgling rates appeared high. Predation by mink was not observed this year as it had been in 1999. Two feral cats were removed, one from each of the two nesting areas on Ocracoke Island.

*Species Evaluation* All species of colonial waterbirds nesting on Cape Hatteras National Seashore beaches declined significantly this year (Table 2). Gull-billed Tern nest numbers were the lowest ever recorded at 3 nests. This follows the highest record of 103 nests found just one year ago. This is noteworthy since the species is listed as threatened in North Carolina. For the past two years, nesting has been limited to only one site located at Ocracoke Inlet. (Table 1). This population is often small and variable in the Seashore. Common Tern nests had been steadily increasing from a low of 278 in 1992 to over 700 in 1997 and 1998. Numbers have shown a sharp decline in the past two years. This year numbers were down to 129 nests compared to 440 last year, representing a 71% decrease. Least Terns, whose numbers had been diminishing since 1993 showed an increase at 355 nests in 1999 but fell again in 2000 to 180, a 49% drop. Least Terns remain difficult to census since the nesting population often abandon sites and later establish new colonies in other locations within the Seashore. A total of 149 Black Skimmer nests were identified in 2000, which is a 47% decline from 306 nests in 1999. It is expected that individual species numbers will show fluctuations on the short term. However, the decline in nests this season is significant and should be monitored closely over the next several years.

Human Disturbances Nesting areas along the east facing beaches between ramps 23 and 34 were located on narrow beaches. Similar conditions were found along the South beach between ramp 45 and 49, which is an extremely high visitor use area. Colonies situated on narrow sections of beach are more exposed to disturbances caused by human activity. The posted areas often do not allow enough of a buffer around the sites. If posted areas were enlarged to better reduce human disturbances, off- road vehicle passage and other recreational activities would be limited as a result.

Frequent human disturbance can cause the abandonment of nest sites as well as direct loss of eggs and chicks. Incidents of park visitors entering posted bird closures were documented between May and August of 2000. Most were not witnessed but documented based on vehicle or pedestrian tracks left behind. Numbers are conservative since some individual records involved more than one vehicle or pedestrian. Fifty-eight incidents were recorded of off-road vehicles entering posted bird closures. These incidents required, at minimum, repairs to twine strung between posts but often involved the replacement of broken posts and signs. Fifty-six incidents of pedestrians entering posted bird closures were noted parkwide.

Predator Control Feral cats have been identified as a serious predator. The American Bird Conservancy donated \$1000 dollars to help reduce the cat population. Funds were used to purchase live-traps and bait. Traps were set in vegetated areas where cat tracks were seen moving towards the beach. Trapping success was low, with only two feral cats caught. These were transferred to Dare County Animal Shelter. Trapping efforts may be more successful during the cooler months when food supply is lower. In areas where raccoons or mink are found to be habitually hunting in a colony, measures need to be taken to remove problem individuals.

Conclusion and Recommendations Productivity was low within the Seashore this year both in nest numbers and nest success. Colonies should be closely monitored in future seasons to determine if this trend continues. As each breeding season approaches, potential breeding grounds within the Seashore must be promptly identified and protected to safeguard birds. Some closures should be enlarged to decrease human disturbance. The draft North American Colonial Waterbird Conservation Management Plan recommends a minimum buffer of fifty yards to the nearest nest. Implementing this management recommendation would result in the seasonal closure of some areas to off off-road vehicles and other recreational activities. The impacts from human disturbance need to be better monitored. Efforts to reduce feral cat populations need to intensify. More public education and local out-reach programs are needed.

Development along the North Carolina coast is increasing at a fast pace. Thus federal lands such as Cape Hatteras National Seashore, Cape Lookout National Seashore and Pea Island National Wildlife Refuge become increasingly important for the future of colonial waterbird survival. Many species are showing serious declines in North Carolina. It is vital we manage our sites in such a way to provide suitable, undisturbed habitat for these nesting birds.

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**Table 1. Number of Colonial Waterbird Nests found on  
Cape Hatteras National Seashore beaches in 2000.**

Location	common tern	least tern	gull-billed tern	black skimmer	total
Oregon Inlet flats		4			4
Ramp 23		4			4
Ramp 34a*		10			10
Ramp 34		18			18
Cape Point		3			3
South beach**		15			15
Hatteras Inler spit				3	3
Ocracoke guarded beach		2			2
Ocracoke Inlet flats	129	128	3	146	406
<b>Total</b>	<b>129</b>	<b>184</b>	<b>3</b>	<b>149</b>	<b>465</b>

\*0.8 miles north of Ramp 34

\*\*area between Ramps 45 and 49

**Table 2. Trends in number of nests at  
Cape Hatteras National Seashore during the period 1977 to 2000.**

	1977*	1983*	1988*	1992*	1993*	1995	1997	1998	1999	2000	
<b>Species</b>											
Gull-billed tern	27	7	26		12	58	84	21	103	3	
Forster's tern	382	63				31					
Common tern	802	763	678	278	422	503	718	715	440	129	
Least tern	121	508	450	454	761	342	278	173	355	184	
Sooty tern					1						
Black Skimmer	286	296	144	30	226	139	454	366	306	149	
<b>Total</b>	<b>1618</b>	<b>1637</b>	<b>1298</b>	<b>762</b>	<b>1422</b>	<b>1073</b>	<b>1534</b>	<b>1275</b>	<b>1204</b>	<b>465</b>	

\*Surveys conducted by J. Parnell, University of North Carolina, Wilmington